

**Increasing Diversity, Inclusion, and Opportunity in Economics:
Perspectives of a Brown-Eyed Economist**



**Loretta J. Mester
President and Chief Executive Officer
Federal Reserve Bank of Cleveland**

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Introduction

I thank the organizers and the Federal Reserve Bank of St. Louis for inviting me to speak at the second annual symposium on women in economics. The St. Louis Fed has been a leader within the Federal Reserve System in focusing attention on attracting and retaining the talents of women in the economics profession. The Bank's series of podcasts with women in the field and this symposium have highlighted the challenges women face but also their successes. I believe that increasing awareness of what can be accomplished if one pursues an economics degree – that is, explaining “the value proposition” as they say in business – can play an important role in attracting people to the field of economics. I also believe we should not assume that people, even those in the profession, realize how significant the differences in outcomes for males and females in the profession are. So it is important to document and publicize the evidence that women and minorities are under-represented in economics, and to provide information on interventions that have been shown to help level the playing field. Today's symposium does an excellent job on these scores. Thanks to the work of the St. Louis Fed and others, the Federal Reserve System is aware of where it stands in terms of diversity, it has a better understanding of the value of promoting a diverse culture, and the System is taking concrete steps to increase diversity, inclusion, and opportunity across the institution. Of course, the views I'll present today are my own and not necessarily those of the Federal Reserve System or my colleagues on the Federal Open Market Committee.

I am sure that many of you are expecting me to start my remarks with a brief anecdote of how, at some point in my career, I was mistreated in some way because I am a woman. It is clear that this has happened to others and it is wrong, but I've been very lucky. In fact, I came into economics quite by accident. I didn't start out to be an economist. I majored in mathematics at Barnard College but also pursued a second major in economics because it seemed interesting and didn't require much additional course work. I applied to graduate school in math but ended up in the economics Ph.D. program at Princeton because two professors there – male professors, I might add – wrote to me explaining that Princeton's economics program was very mathematical and encouraging me to come to Princeton and study economics. I've always thought that I lucked into economics. It has provided me with a fascinating

career, one that presents new questions to answer each day, and I hope that at least in a small way I've been able to provide some good in return through economic research and policymaking. Yet, economics as a field is not diverse.

What Is the State of Diversity in Economics?

Economics is a popular major in U.S. colleges and universities, but the field has had less success in attracting women or historically under-represented racial and ethnic minorities. While there has been some improvement compared to the 1970s, this under-representation has been going on for many years. Women earn between 30 and 35 percent of the bachelor's degrees in economics, and this share has been relatively stable over the past two decades.¹ It is higher than the female share of bachelor's degrees in some of the STEM fields, including computer sciences, and engineering and engineering technology, but lower than the female share of bachelor's degrees conferred in the physical sciences and in mathematics and statistics.² Across all fields, women earn more than half of all bachelor's degrees awarded.³ This means women are choosing to major in economics at only a third of the rate of men.⁴ The numbers are lower for under-represented minorities, who earn slightly more than 20 percent of bachelor's degrees and

¹ Lundberg (2018) discusses the American Economic Association's Committee on the Status of Women in the Economics Profession (CSWEP) 2017 survey results of economics departments. At the 126 schools CSWEP polled that have doctoral programs in economics, the female share of undergraduate seniors majoring in economics was about 35 percent in 2017, and it has varied between 30 and 35 percent since 1998; of these schools, those with higher ranked economics programs have a higher share of female undergraduate majors. Among the 113 schools without Ph.D. programs that responded to the CSWEP poll, the share was 35 percent in 2017, and has been relatively stable at that level for the past 10 years. Using U.S. Department of Education data on four-year, nonprofit colleges and universities over 2011-2015, Bayer and Wilcox (2017) find that women earned less than a third of the bachelor's degrees in economics.

² According to data from the U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS), in the academic year 2016-2017, women earned 19.1 percent of the bachelor's degrees conferred in computer and information sciences, 20.3 percent of the bachelor's degrees conferred in engineering and engineering technology, 39.7 percent of the bachelor's degrees conferred in the physical sciences, and 41.8 percent of the bachelor's degrees conferred in mathematics and statistics. Author's calculations based on Tables 322.10 and 322.50 in the IPEDS. For trends by field, see Tables 325.35, 325.45, 325.70, and 325.65 in the IPEDS.

³ Women earned 57.3 percent of bachelor's degrees conferred in the academic year 2016-2017. Author's calculations based on Tables 322.10 and 322.50 in U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS).

⁴ Among schools in the top 100 that offer both business and economics degrees, regardless of gender, students prefer the business degree over economics, but women do so to a greater extent. See Goldin (2013, 2015a).

slightly less than 12 percent of economics degrees awarded, meaning that minorities are choosing economics over other majors at only about half the rate of white students.⁵

In the professorial ranks, there were large gains in female representation in economics in the 1970s and 1980s, but since then, progress has slowed. Lundberg and Stearns (2019) examined the data available back to the 1970s on the Chairman's Group of 43 economics departments, which are the highly ranked departments and which granted about two-thirds of U.S. economics Ph.D.s in the 1970s. Gender diversity declines as one moves up the academic ranks, but at these institutions, the female shares rose significantly across the three ranks: the female share of full professors rose from 2 percent in 1972 to 6 percent in 1993. Similarly, over the same period, the female share of associate professors in the Chairman's Group of institutions rose from 4 percent to 11 percent, and the female share of assistant professors rose from 9 percent to 21 percent. By 2017, the female share of full professors and associate professors had more than doubled, up to more than 13 percent for full professors and 23 percent for associate professors. But at this group of schools, the female share of assistant professors peaked at 29 percent in 2009, and has fallen to 24 percent since then, meaning little net growth for more than two decades.

The American Economic Association's Committee on the Status of Women in the Economics Profession (CSWEP) does an annual survey of a broad group of economics departments, with data going back to the 1990s. In 2017, CSWEP surveyed 126 doctoral departments and 125 nondoctoral departments, and received responses back from all the doctoral programs and 113 of the nondoctoral programs.⁶ At the departments offering Ph.D.s in economics, the assistant professor share has not regressed since 2009 as it

⁵ Bayer and Wilcox (2017), Table 1. Data are for four-year, not-for-profit colleges and universities in the U.S. for the period 2011-2015.

⁶ See Lundberg (2018).

did in the Chairman's group of schools, but it has not grown either.⁷ And in the CSWEP sample, in 2017 about 32 percent of first-year Ph.D. students in economics were women and women accounted for about the same share of those who earned Ph.D.s in economics in 2017. These shares have basically stayed between 30 and 35 percent over the past two decades.⁸

Our focus today is on women in the profession, but minorities are also under-represented in economics. Analysis of minority representation in graduate economics is complicated a bit by the fact that almost 60 percent of doctorates awarded in economics are awarded to nonpermanent resident students. Some of these graduates return to their own countries, while others stay in the U.S. Restricting attention to U.S. citizens and permanent residents, of the 468 economics doctorates awarded in 2017, only 34, that is, 7 percent, were awarded to under-represented minorities: 15 were earned by African Americans, 18 by Hispanics or Latinos, and 1 by an American Indian or Native Alaskan.⁹ This is a lower percentage than earned Ph.D.s across the STEM fields, where under-represented minorities earned 11 percent of the Ph.D.s. in 2017.¹⁰ In the academic professorial ranks in economics, under-represented minorities make up a little over 10 percent of assistant professors and about 7 percent of full professors.

We can certainly applaud the progress that has been made since the 1970s, but it is clear that there is more work to be done. While you don't need to have majored in economics to enter a Ph.D. program in economics, it is a natural path. So the under-representation of women and minorities in economics at the undergraduate level factors into the under-representation of these groups at the graduate level and throughout the ranks of academia. Unless the entry of women and minorities into graduate school picks

⁷ According to the CSWEP survey data, as of 2017, at programs that offer Ph.D.s in economics, 13.9 percent of full professors, 23.0 percent of associate professors, and 28.8 percent of assistant professors in economics were women. The comparable numbers for schools without doctoral programs were higher: 24.1 percent of full professors, 39.3 percent of associate professors, and 43.4 percent of assistant professors in economics were women. See Table 5, Lundberg (2018).

⁸ See Lundberg (2018).

⁹ These statistics are from the U.S. Department of Education IPEDS data as reported in Table 1 of the Committee on the Status of Minority Groups in the Economics Profession (CSMGEP) (2018).

¹⁰ See Table 2, Committee on the Status of Minority Groups in the Economics Profession (CSMGEP) (2018).

up, it is hard to see how the numbers of Ph.D.s in the ranks of academia and in nonacademic positions that require a Ph.D. in economics can increase.

A natural question to ask is: what fields are women choosing to go into, if not economics? The humanities, including English, foreign languages, and visual arts, and nursing continue to attract women, as they have traditionally done. But women have been selecting other social sciences as well. Data from the National Center for Education Statistics indicate that psychology is a relatively large major, accounting for about 6 percent of all bachelor's degrees conferred in the 2016-2017 academic year, with about 78 percent earned by women.¹¹ Business is a large major: almost 20 percent of bachelor's degrees conferred were in business, with 47 percent of those earned by women. Women have also been selecting the sciences. Biology accounts for about 6 percent of degrees conferred, with about 61 percent earned by women. At the Ph.D. level, the female shares in these fields are also relatively high.¹²

The fact that women are attracted to other social sciences, some of the natural sciences, and business suggests more progress can and should be made to attract women to economics.

Why Does It Matter?

You might ask: why should we care? Shouldn't students be able to choose their field of study and career path? Something that interests them and in which they have a comparative advantage in succeeding? The low level of diversity in economics may just reflect people's preferences. That's a possibility, but the fact that the business major is attractive to women may suggest something else. And even if that's the case, then it is incumbent upon those of us in the field and upon educators to ensure that students can make *informed* choices and that they understand the value of an economics degree to the individual and to

¹¹ Author's calculations based on Tables 322.10 and 322.50 in U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS).

¹² Author's calculations based on Tables 324.10 and 324.35 in U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS).

society. And it is imperative that we offer them the opportunity to perform on a level playing field and eliminate barriers that women and minorities face when pursuing a career in economics.

But there is a bigger reason as well. Economics is a field that influences public policy, policy that affects all types of people. So it is important that we have diverse views informing that policy. I believe Fed policymakers like me need to consider the effects of our monetary, regulatory, and payments policies on all our constituents. We are, after all, working on their behalf. That becomes easier to do when we have a diverse staff. The Federal Reserve System employs about 700 Ph.D. economists and many others with bachelor's and master's degrees in economics. In order to maintain a diverse staff, it is important that more women and minorities be attracted to the field.

Moreover, I have seen firsthand how having a diversity of views expressed and discussed around the table can actually lead to better policy decisions. Sometimes what seems to be a nonmainstream idea when first offered, in time, becomes the leading idea. There is research to back this up. Group dynamics are different when teams are diverse. Participants don't necessarily find it as comfortable to serve on a diverse team, but the diversity helps to avoid everyone thinking in the same way. Diverse teams tend to be more objective and to focus on the facts when making decisions; they may process information more carefully because they are forced to confront a different way of thinking and convince those with alternative views; and firms with more diversity tend to be more innovative.¹³ Research also shows that firms with diverse management tend to have above-average earnings.¹⁴ Perhaps the better decision-making and innovation associated with diversity is showing up on the bottom line.

¹³ See Rock and Grant (2016).

¹⁴ Rock and Grant (2016) cite a Credit Suisse analysis of 2,400 companies worldwide that found that organizations with at least one female board member had higher return on equity and higher net income growth than firms with no female board members. In addition, Hunt, Layton, and Prince (2015) report on a McKinsey & Company analysis of 366 companies that found that those in the top quartile in terms of management's ethnic and racial diversity were 35 percent more likely to have financial returns above their industry mean, while those in the top quartile in terms of management's gender diversity were 15 percent more likely to have financial returns above their industry mean.

Beyond current policy and business outcomes, another reason I would like to see more diversity in the field of economics is so the field itself doesn't get stymied by group-think. To expand our knowledge, economics needs to continually take on new research questions and develop innovative techniques and ways of analysis to arrive at answers to these questions. Broader representation in economics means a broader set of issues will be tackled and a broader set of research results disseminated. The field will continue to evolve, resulting in better policy outcomes that will improve the economic well being of a greater share of the population.

What Can Be Done to Increase Diversity in Economics?

The natural next question to ask is: what can we do to increase diversity in the field of economics? This is a complex problem, with no easy answers. The good news is that there is an increasing awareness of the diversity problem, some programs have been developed to try to address the issue, and solid research design methods are being applied to evaluate potential interventions.¹⁵ This research can help guide us, but at this stage of the journey toward increased diversity, the approach likely has to be of the "let a thousand flowers bloom" variety: trying many things on several fronts, and then evaluating their effects. So let me conclude my remarks with a few suggestions.

(1) Convince those in charge there is a problem and get them involved in finding solutions.

I start with the mindset described by the adage: don't attribute to malice what is best explained by ignorance. We need to convince more of those in charge that there is a problem. I applaud the work that has been done in documenting the trends in diversity in the field of economics. Economics is a data-intensive field. Coupling the data with the research indicating diversity has positive returns should be persuasive to other economists. We cannot just convince the women in the field there's an issue; we also need to convince the men, who, as the numbers show, are in the majority and therefore have decision rights. This has to be done not only in universities but also at major employers, like the Fed, and at

¹⁵ Buckles (2019) discusses some of this research.

important institutions like the National Bureau of Economic Research (NBER).

The good news is that this is already happening. The American Economic Association is taking a close look at diversity in the economics profession and is offering programs and resources aimed at increasing diversity at all levels. The Undergraduate Women in Economics (UWE) Challenge, funded by the Alfred P. Sloan Foundation, and run by Tatyana Avilova and Claudia Goldin, is a randomized controlled trial that is offering grants to economics departments for efforts to increase the number of female majors. The fact that the researchers received such positive interest suggests that many departments see increasing diversity in economics as a worthy goal.¹⁶ Diversity and inclusion have become a focus at the Fed, and also at other major employers of economists like the International Monetary Fund (IMF), the Bank of England, and the European Central Bank (ECB). This symposium established by the St. Louis Fed is an example of some of the work being undertaken at the Federal Reserve System. I am happy that the Cleveland Fed will host this symposium next year.

Another reason we need to convince more men that this is an issue is that, for the time being, they make up the majority of the role models available for women economics students and for women in the profession. The empirical evidence on role models is somewhat mixed.¹⁷ One study of a selective liberal arts college that essentially involved random assignment of students to instructors found that having an instructor of the same gender didn't increase the probability of a student taking more classes or majoring in the field, regardless of the gender distribution in the department, although it did have some effect on

¹⁶ Goldin (2015b) and Avilova and Goldin (2018).

¹⁷ Goldin (2013) and Griffith (2013).

grading.¹⁸ But these results do not suggest that mentoring itself is not helpful. The AEA's mentoring workshop, CeMENT, held after the annual winter meetings, in which participants present and receive feedback on their research, does seem to have resulted in an increase in overall and top-tier publication rates and grant receipts.¹⁹

In addition, we should not be requiring women to do all the mentoring of other women. This places an undue burden of service on them, which may disadvantage female professors as they seek advancement up the professorial ranks. We need to let female students know that the lack of available women does not mean a lack of role models.

(2) Increase demand for an economics degree through increasing awareness.

A second step is to increase the demand for an economics degree among women and minorities. The financial crisis and Great Recession led many, no doubt, to question the usefulness of the profession, despite the fact that economists created many of the remedies. I believe those in the profession – both male and female – need to do more to explain what economics is and the many ways it can be used to help society. Merriam-Webster defines economics as “a social science concerned chiefly with description and analysis of the production, distribution, and consumption of goods and services.” Who wants to study that? I'd rather be working on robotics and autonomous vehicles, too. Others view economics as a path to working in finance or running a business, but that limited view may put off people who are more motivated to help society. We need to embrace the fact that economics is a *social* science, one that helps us think about how people use scarce resources, interact in markets or in other economic settings, respond

¹⁸ Griffith (2014). The study found that students earned a higher grade in fields dominated by the opposite gender when they had an instructor of the same gender. That is, female students received higher average grades from female instructors when taking courses in fields dominated by men (such as economics) – the difference was on the order of moving from a B-minus to a B. And there was a similar effect for males, who received higher average grades from male instructors when taking courses in female-dominated fields (such as education). A separate study, Carrell, Page, and West (2010), in a different setting found evidence that such grade differentials reflected achievement differentials and not just inflated grading. So the availability of role models appears to positively affect student achievement, but a lack of role models isn't the whole story about why some students choose not to continue in economics.

¹⁹ Buckles (2019) and Blau, et al. (2010).

to incentives, and make trade-offs. The fact that economics involves people and their choices makes economics complicated but also impactful to society and an interesting intellectual pursuit. Given the popularity of the psychology major among women, emphasizing the behavioral aspects of economics and its wide application could help to attract women to the field.

Indeed, some of the interventions being examined in the UWE Challenge are intended to provide more accurate information on the breadth of application of economics and the career paths available to economics majors. Preliminary results from a field experiment undertaken by Southern Methodist University, a participant in the Challenge, suggest these types of informational interventions can effectively raise the number of women choosing to major in economics.²⁰ Another study found that first-year college students at a Swiss university who were assigned to write a paper on economics were more likely to major in economics, evidence that learning more about the field can attract students to it. However, the effect on choice of major was driven by male students; for females, the effect was not statistically significant.

We likely need to start much earlier than college if we hope to attract more women and minorities to the field. I serve on the board of the Council for Economic Education. This nonprofit organization's mission is to educate students in kindergarten through high school about economics and personal finance so they can make better decisions for themselves, their families, and their communities. In addition to providing materials to teachers, the council runs the National Economics Challenge, a quiz bowl competition that reaches a wide population of students in terms of gender, race, and income. A recent survey found that challenge participants' performance on advanced placement exams exceeds the national average, with especially strong gains shown by female and minority students, and that participants are more likely than nonparticipants to choose to major in economics.²¹ This suggests that exposure to economics at a younger age can help spur knowledge of and interest in the field.

²⁰ Avilova and Goldin (2018).

²¹ Fricke, Grogger, and Steinmayr (2018), as referenced in Buckles (2019).

(3) Ensure people have the opportunity to succeed once they choose economics and be cognizant of the fact that some policies have unintended consequences.

Economics is a quantitative field. The answer to getting more women to choose economics is not to make it less mathematical. Indeed, the argument that women may be turned off by the quantitative nature of the field is not supported by the evidence. Recall that women earn over 40 percent of bachelor's degrees in math and statistics, a higher share than in economics.²² In addition, women do well in math at the high school level; women are selecting other fields that are very quantitative, like psychology; and studies indicate that math aptitude doesn't explain gender differences in participation in upper-level economics courses.²³ Instead, it is important that students know early on that mathematics, statistics, and econometrics are necessary if they are to pursue an advanced degree. I was always struck by the fact that the undergraduate economics curriculum seems very different from graduate-level economics. That's likely because economics is taken by many who do not plan to do graduate work in the field. In order to ensure that students don't learn too late what skills they need to enter graduate school, several universities have interdisciplinary programs combining economics and mathematics so that students have the proper foundation for advancing in the field.

The American Economic Association offers a summer training and scholarship program to help prepare students for graduate school and, with the National Science Foundation, a Summer Economics Fellows Program, which is designed to increase the participation and advancement of women and under-represented minorities in economics. The Cleveland Fed held the first workshop for research assistants across the Federal Reserve System to give them a sense of what is required to get into and succeed in graduate school. We will be holding our second workshop this summer.

In thinking about ways to spur more diverse participation, it is always good to remember a lesson from

²² Table 325.65, U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS).

²³ See Goldin (2013), and Bayer and Rouse (2016).

economics: with any intervention there can be unintended consequences. For example, many universities have enacted policies that allow assistant professors to extend their tenure clocks when they have children. In the interest of fairness, they have made these policies gender neutral. But at least one study finds that the policies increase the probability that men get tenure in their first job but reduce the probability that women get tenure, even when controlling for number of publications.²⁴ This leads me to my last suggestion: the use of “nudges.”

(4) Use nudges to change behavior.

Behavioral economists use the term “nudge” for something that isn’t mandated but points people in the right direction and can change behavior.²⁵ We are all born with unconscious biases – we tend to relate better to people who are more like us. This presents a challenge to women and under-represented minorities trying to get ahead in the field, affecting recommendation letters, the probability of getting published, and tenure decisions.²⁶ Making decision-makers aware of these biases has been shown to affect behavior in a positive way; so disseminating the research that shows that women are treated differently in the profession to those in the profession is useful.

It is the responsibility of the junior people in the economics profession to do the best work they can, which means learning all they can, seeking out opportunities to present their own research, and asking for advice. It is the responsibility of the senior people in the profession to cultivate an inclusive environment so that all have the opportunity to reach their potential. Some people feel that the atmosphere in economic seminars is too aggressive; others feel it helps generate better research. Rather than change the seminar culture, we should do what we can to make women feel comfortable in that setting. After all, critique is part of research, and to be successful at publishing your work, one has to get used to it and persevere. As I learned in my German course, “Übung macht den Meister,” that is, “Practice makes

²⁴ See Antecol, Bedard, and Stearns (2018) and Lundberg and Stearns (2019).

²⁵ See Thaler (2017, 2018) and Sunstein (2014).

²⁶ See Lundberg and Stearns (2019) for a summary of some of the research.

perfect.” Practice seminars and study groups can help people become more comfortable sharing ideas and questioning others. Senior members of the profession can help ensure that their study groups are more inclusive and they can draw out those reluctant to speak up. And in a meeting, when Sheila offers an idea that is totally ignored until Bruce repeats it and is declared a genius, point out to the group that Sheila made the same point earlier and ask her to elaborate. If you find yourself putting together a program committee to select papers for a conference, or organizing the conference or a seminar series, work hard to ensure there is diversity on the committee, on the program, and in the seminar series. This does take some effort, but it can be done. If you are sponsoring a conference or seminar series, make diversity a top priority.

Finally, you may have noticed the title of my talk and thought: “Perspectives of a brown-eyed economist? That’s silly!” You’re right. But how many would have thought that if I had titled this “Perspectives of a woman economist?” That seems more natural – but it shouldn’t. No one really wants to be known as a woman economist, or a woman chef, or a woman banker. We don’t want to be qualified by our gender. We are economists, chefs, and bankers who just happen to be women.

It is difficult to change institutions and cultures. But I am confident that with concerted efforts from both men and women, economics will become more diversified and inclusive, which will strengthen economic research and policymaking and, in turn, help promote a healthier economy for a wider group of people. I look forward to the time when the top women in the field are not considered top women economists, but instead are viewed as unqualified successes.

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